cavities of the mammal's heart, which fourfold division it shares with birds alone, do not exactly correspond compartment for compartment with those of the bird's heart, at least in so far as concerns the ventricles. For the reptilian heart Is provided with only one ventricle, and therefore the division of that cavity must have been independently accomplished in mammals and in birds.

There are two features in the venous system which distinguish all tlie Mammalia (with the exception of *JSchidna* in one of these points) from vertebrates standing lower In the series. The hepatic portal system is limited to a vein which conveys to the liver blood derived from the alimentary tract; in no' mammal except in *Echidna,* is there any representative of the anterior abdominal vein of lower vertebrates. In that animal there la such a vein, which apparently arises from a capillary network upon the bladder and passes up, supported by a membrane, along the ventral wall of the abdomen to the liver, thus emptying blood into that organ exactly as does the anterior abdominal vein of the frog. In no mammal is there any trace of a renal portal system. The kidneys derive their blood from the renal arteries only.

Many mammals have two superior venae cavae ; this is the case, for instance, in the Elephant and the Hodents and other types lying comparatively far down in the series. In most if not In all mammals there are considerable remains of one of the posterior cardinals, in the form of the azygos vein, which opens into the vena cava superior or pre-caval vein, *i.e.* the superior cardinal just before the latter debouches Into the heart. This one posterior cardinal Is usually on the right side; but it may be on the left side, for instance in *Tricfiosurus vulpecula.* In *JETalmaturus ~bennettii* there are two azygos veins, one left and one right, of which the left is rather the larger.[1]

**Urinary** Organs.—The kidneys in the Mammalia have a compact form, which contrasts with the somewhat diffuse and vaguely-outlined kidneys of the Sauropslda. In mammals the

organ is as a rule of that peculiar shape which is called ** kidney-shaped"; a depression termed the hHum, which receives the ducts of the glands, indenting the border of an otherwise oval-shaped gland. In some few mammals the kidney is broken up

[1] Beddard, Plroc, *Zwl. 8w.* 180$, p. 1$0.